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A NOTE ON THE GENUS *DIPHOTUS* BARBER 1941 (COLEOPTERA; LAMPYRIDAE.)

By FRANK A. McDERMOTT¹

The genus *Diphotus* was established by the late Herbert S. Barber (1941) for a series of lampyrids encountered in the Jamaican collections of Dr. John B. Buck, giving as distinctive from *Photinus*:

"Sternites 6 and 7 not apparently luminous in either sex; sternite 8 well developed and conspicuously the source of light."

Diphotus bucki was named as the type species. In addition to the type species, Barber described the following new species; *D. flavomarginatus*, *D. lucivolans*, *D. montanus*, *D. ornicollis*, *D. mutchleri*, and *D. semifuscus*. He further found that *Photinus unicus* Mutchler (1923), *P. glaucus* (G. A. Olivier, 1790), and *P. pantoni* E. Olivier (1907) also belonged in *Diphotus*. Since the above publication by Barber, an opportunity has been provided through the courtesy of the entomologists of the Museum Nationale de l'Histoire Naturelle, Paris, to examine a paratype of Olivier's *Photinus pantoni* which proved to be identical with Barber's *Diphotus mutchleri*, and the latter therefore becomes *Diphotus pantoni* (E. Oliv.) The identification of Mutchler's *Photinus unicus* with Buck's specimens was marked as questionable by Barber; the writer's examination of specimens in the collection of the Institute of Jamaica leaves him with no doubt of their identity. To the above species, Buck (1947) added *Diphotus dahlgreni*, *D. darlingtoni*, and *D. masti* as new species.

A study of the original descriptions, and examinations of specimens in the U. S. National Museum and the Museum of Comparative Zoology, has shown that a number of other Antillean lampyrids previously described as *Photinus* are properly *Diphotus*; these are shown on table I.

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TABLE I.—ADDITIONAL ANTILLEAN DIPHOTUS

SPECIFIC NAME:	AUTHORITY:	LOCALITY:	REASON ² :
albicollis	Chevrolat (1858)	Cuba	M.C.Z.
apoplecticus	E. Olivier (1899)	Cuba	Description
cubanus	Leng & Mutchler (1922)	Cuba	U.S.N.M.
dubiosus	Leng & Mutchler (1922)	Puerto Rico	Description
infernus	E. Olivier (1912)	Martinique	U.S.N.M.
lengi	Mutchler (1923)	Haiti	Description
limbipennis	J. Duval (1857)	Cuba	U.S.N.M. ³
lutzi	Leng & Mutchler (1922)	Dominica	Description
magnus	Mutchler (1923)	Cuba	M.C.Z. ⁴
nanus	E. Olivier (1912)	Cuba	U.S.N.M.
nefarius	E. Olivier (1912)	Cuba	U.S.N.M. & M.C.Z. ⁵
pygmaeus	E. Olivier (1899)	Cuba	M.C.Z.
quadrinotatus	Castelnau (1840)	Hispaniola	U.S.N.M. ⁶
simplex	E. Olivier (1912)	Dominica	U.S.N.M. ⁷
singularis	Leng & Mutchler (1922)	Cuba	Description
sublateralis	Mutchler (1923)	Cuba	Description
		Puerto Rico	
triangularis	E. Olivier (1912)	Hispaniola;	U.S.N.M. ⁸
vittatus	G. A. Olivier (1790)	Puerto Rico	U.S.N.M.
vittiger	Gyllenhal (1817)	Martinique	U.S.N.M. ⁸

²for placing in *Diphotus*. The descriptions frequently leave no question as to the genus.

³*Heterophotinus* E. Olivier, 1907.

⁴Bears a superficial resemblance to our common *Photinus pyralis*.

⁵*quadrinotatus* by label on specimen in U.S.N.M.

⁶Has also small lateral pale spots on 7th sternite, possibly luminous organs.

⁷Much like specimens of *Rabopus decorus* (Klug) Mots., but smaller.

⁸Marked as *Diphotus* by H. S. Barber.

In addition to the above, a specimen labeled *Photinus marginipennis* in the collection of the American Museum of Natural History, is also *Diphotus*; it does not answer the description of *P. marginipennis* by Lucas (1857). It appears that species properly included in *Diphotus* are rather widely distributed throughout the West Indies, and if the specimen of *P. marginipennis* referred to above was collected in Brazil, Lucas' locality, they may also be found in South America. The foregoing list is therefore probably by no means complete, and collectors having specimens of "*Photinus*" from South America, and possibly also from Central America and Mexico, may find it desirable to examine them to determine if they really belong in that genus.

Barber's rather brief characterization of *Diphotus* may be expanded

to give a differentiation from *Photinus*. The most obvious distinction from *Photinus* is the presence of the luminous organs on sternite 8 only; none on sternite 6, and doubtfully on sternite 7 in one case, noted above. In *Diphotus* the 7th sternite is frequently black; the mandibles tend to be proportionately larger and the labial palpi smaller than in *Photinus* species of corresponding body size. The characters are given in Table II.

TABLE II.—CHARACTERS OF DIPHOTUS AND PHOTINUS

	<i>Diphotus</i>	<i>Photinus</i>
Luminous organs	Lateral on 8th abdominal sternite in both sexes.	Usually the entire ventral surfaces of sternites 6 and 7 in the ♂; median on sternite 6 in the ♀.
Antennae	Filiform, not compressed; not more than $\frac{1}{2}$ total length of insect.	like <i>Diphotus</i> .
Aedeagus	See Buck (1947) for drawings and description.	See Barber (1941) for general description.
Tibial spurs	Very small, frequently indistinguishable from hairs, or apparently absent.	Pronounced; pattern 0-2-2.

The majority of the species of *Photinus* have well-developed luminous organs, which in the species that have been studied, are used in a specific flashing signal system for the mating of the sexes, while in *Diphotus* the luminosity consists of long steady glows; how species distinction is recognized in the latter genus is unknown.

The question has been raised as to whether *Diphotus* is synonymous with Motschulsky's *Rabopus*. Leng and Mutchler (1922, p. 436) put what they believed to be *Rabopus roseicollis* Mots. in *Lucidota* as *L. decorus*, because of the strongly serrate antennae. In the absence of any possibility of examining Motschulsky's type at this time, and Leng and Mutchler's placing of his *Rabopus roseicollis* in *Lucidota*, it seems

best to consider Barber's *Diphotus* as valid, unless and until indisputable evidence to the contrary can be adduced.

Incidentally, Leng and Mutchler's name *Photinus simplex* for E. Olivier's *P. vitiosus* var. *simplex*, is preoccupied by *P. simplex* Gorham (Biol. Cent. Amer., 1881, p. 42), but as the former species is here transferred to *Diphotus* a new specific trivial name is not necessary.

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ORR'S RECORDS OF BEETLES EATEN BY THE PALLID BAT

Many species of beetles and other insects have been recorded in literature dealing with the food of animals, birds, reptiles and fish. Most of these reports seem to be unknown to systematic entomologists, though they are often well documented and give ecological data and locality records.

Orr¹ found remains of the following beetles (determined by E. C. Van Dyke) beneath a pallid bat roost along San Juan Creek, 9 miles west of Simmler, San Luis Obispo Co., Calif.: *Polyphylla* probably *decimlineata*, *Romaleum simplicicollis*, *Prionus californicus*, *Eleodes acuticauda*. He also cites records by others: at Glendora, Los Angeles Co., Calif., *Prionus californicus*, *Ligyris gibbosus* (by Mrs. Grinnell); at Mission San Antonio de Padua, Monterey Co., Calif., *Polyphylla decimlineata* (by Hatt); near Albuquerque, N. Mex., "large June bugs, and one large ground beetle" (by Borell); at Indian Springs in southern Nevada. Burt saw the bats "... frequently alighting on a lawn to capture June beetles (*Polyphylla*) ...".

The bats must have come to the ground to get the flightless *Eleodes*; indeed heavy wingless Jerusalem crickets (*Stenopelmatus* spp.) are a common food for this species, which catches lizards too.

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¹ORR, ROBERT T. 1954. Natural history of the pallid bat, *Antrozous pallidus* (LeConte). Proc. Calif. Acad. Sci., (Ser. 4), Vol. 28 (No. 4) pp. 165-246, 28 text figs. Published January 7, 1954. (Insects, pp. 231-232).